

Application No. 10/716,149
Amendment B dated March 14, 2006
Reply to Office Action mailed October 4, 2005

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. **(Currently Amended)** An optoelectronic module array system, comprising:
 - a host board;
 - a plurality of daughter cards that are each operably connected ~~perpendicularly~~ to the host board ~~at an angle, the plurality of daughter cards being positioned parallel to one another; and~~
 - a plurality of optoelectronic modules that are each ~~selectively and~~ removably connected to a respective one of the daughter cards ~~such that a surface defining the width of each optoelectronic module is positioned parallel to a surface of the respective daughter card, the daughter card surface being perpendicular with respect to the host board.~~
2. **(Currently Amended)** An optoelectronic module array system as defined in claim 1, wherein the optoelectronic module ~~is~~includes an optical transceiver module.
3. **(Previously Presented)** An optoelectronic module array system as defined in claim 1, wherein the daughter card surface of each daughter card includes a connector

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receptacle for removably receiving a card-edge connector of a respective one of the optoelectronic modules.

4. **(Currently amended)** An optoelectronic module array system as defined in claim 1, further comprising:

a plurality of cages, wherein each cage is connected to ~~the daughter card surface of a respective one of the plurality of daughter cards,~~ and wherein each cage removably receives ~~a respective one of the plurality of~~ optoelectronic modules.

5. **(Previously Presented)** An optoelectronic module array system as defined in claim 4, wherein each optoelectronic module operably connects to the respective daughter card via the respective cage.

6. **(Original)** An optoelectronic module array system as defined in claim 5, wherein each cage is three-sided and provides electromagnetic shielding for the respective optoelectronic module.

7. **(Currently Amended)** An optoelectronic module array system as defined in claim ~~5~~ 1, wherein each optoelectronic module includes a latching mechanism that selectively secures the optoelectronic module in a fixed position with respect to the host board.

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8. **(Original)** An optoelectronic module array system as defined in claim 7, wherein each latching mechanism includes a lock pin that engages a hole defined in the respective cage to secure the optoelectronic module.

9. **(Currently Amended)** An optoelectronic module array system as defined in claim 1, wherein at least two optoelectronic modules are connected to ~~each~~ at least one of the daughter cards.

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10. **(Currently Amended)** An optical device, comprising:
an optical transceiver module array system, including:
a host board;
a plurality of daughter cards that are each operably connected
~~perpendicularly~~ to the host board, ~~the plurality of daughter cards being positioned~~
~~parallel to one another~~; and
a plurality of transceiver modules that are each removably connected to a
respective one of the daughter cards ~~such that each transceiver module is oriented~~
~~in an edge-on orientation with respect to the host board.~~
11. **(Original)** An optical device as defined in claim 10, further comprising a
plurality of optical fiber connectors that are each connected to optical ports of a respective one of
the transceiver modules, wherein each optical fiber connector includes a release sleeve that slides
along the optical fiber connector to engage and disengage the connector to and from the optical
ports.
12. **(Currently Amended)** An optical device as defined in claim 10, further
comprising:
a plurality of cages, wherein each cage is connected to a respective one of the
plurality of daughter cards, and wherein each cage removably receives a respective one of
the plurality of optoelectronic modules.

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13. (Currently Amended) An optical device, comprising:

an optical transceiver module array system, including:

a host board;

a plurality of daughter cards that are each operably connected
~~perpendicularly to the host board, the plurality of daughter cards being positioned~~
~~parallel to one another; and~~

~~a plurality of transceiver modules that are each connected to a respective~~
~~one of the daughter cards such that each transceiver module is oriented in an~~
~~edge-on orientation with respect to the host board;~~

a plurality of cages, wherein each cage is connected to a respective one of
the plurality of daughter cards, and wherein each cage receives a respective one of
the plurality of optoelectronic modules; and

a latching mechanism that is attached to each transceiver module,
comprising:

a rotatable bail; and

a pivot block having a lock pin, the pivot block being pivotally
attached to the rotatable bail, wherein the lock pin engages a portion of the
optical transceiver module array system when the bail and the pivot block
are positioned in a specified configuration to selectively secure the
transceiver module.

14. (Original) An optical device as defined in claim 13, wherein the lock pin
engages a portion of the respective cage that receives the transceiver module.

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15. (Original) An optical device as defined in claim 13, wherein each latching mechanism further includes two curved recesses that are defined in surfaces of the respective transceiver module to each movably receive an end portion of the bail.

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16. **(Currently Amended)** An optical transceiver module array system, comprising:

a host board;

a plurality of daughter cards ~~that are each perpendicularly connected to the host board, the plurality of daughter cards being positioned parallel to one another;~~

a plurality of transceiver modules; and

a plurality of cages that are each connected to a respective one of the daughter cards, each cage being configured to removably receive a respective one of the transceiver modules; and

~~a plurality of transceiver modules that are each received by a respective one of the cages, wherein the cages and daughter cards are positioned such that spacing between each transceiver module is minimized.~~

17. **(Currently Amended)** An optical transceiver module array system as defined in claim 16, wherein a connector receptacle is included on each daughter card to electrically connect the transceiver module to the respective ~~daughter card and~~ host board.

18. **(Currently Amended)** An optical transceiver module array system as defined in claim ~~17~~ 16, wherein each cage provides a ground plane for the respective transceiver module.

19. **(Currently Amended)** An optical transceiver module array system as defined in claim ~~18~~ 16, wherein each transceiver module includes two optical ports, and the

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daughter boards are perpendicular to the host board~~that are oriented with respect to the host board such that an imaginary line that passes through a central portion of both optical ports intersects the host board at substantially a right angle.~~

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20. **(Currently Amended)** An optical transceiver module array system, comprising:
- a host board;
 - a plurality of daughter cards that are each ~~perpendicularly~~ connected to the host board, ~~the plurality of daughter cards being positioned parallel to one another,~~
 - a plurality of cages that are each connected to a respective one of the daughter cards, wherein each cage provides a ground plane for the respective transceiver module; and
 - a plurality of transceiver modules that are each received by a respective one of the cages, ~~wherein the cages and daughter cards are positioned such that spacing between each transceiver module is minimized, and wherein each transceiver module includes two optical ports that are oriented with respect to the host board such that an imaginary line that passes through a central portion of both optical ports intersects the host board at substantially a right angle;~~
 - a connector receptacle included on each daughter card to electrically connect the transceiver module to the respective daughter card and host board; and
 - a plurality of optical fiber connectors that are each connected to the optical ports of respective transceiver modules, wherein each optical fiber connector includes a release sleeve that is slidably engaged with the optical fiber connector.

21. **(Original)** An optical transceiver module array system as defined in claim 20, wherein each optical fiber connector is an LC duplex connector having a connector latch for disengaging the LC duplex connector from a respective one of the transceiver modules.

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22. **(Original)** An optical transceiver module array system as defined in claim 21, wherein each release sleeve is shaped to correspond to the exterior shape of the respective LC duplex connector.

23. **(Currently Amended)** An optical transceiver module array system as defined in claim ~~22~~20, wherein the release sleeve includes a body defining open first and second ends, wherein a portion of the body further defines a curved inner surface.

24. **(Original)** An optical transceiver module array system as defined in claim 23, wherein the release sleeve is selectively slidable between a first position and a second position, and wherein in the second position the curved inner surface engages the connector latch of the LC duplex connector to enable it to disengage from a respective one of the transceiver modules.

25. **(Currently Amended)** An optical transceiver module array system as defined in claim ~~24~~20, wherein each cage defines a three-sided structure.

26. **(Original)** An optical transceiver module array system as defined in claim ~~24~~20, wherein at least two of the optical transceivers are positioned on opposing surfaces of ~~the one of the daughter card~~host board.

27. **(Currently Amended)** An optical transceiver module array system as defined in claim ~~25~~20, wherein the release sleeves are ~~is~~-composed of a thermoplastic material.

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28. (New) An optoelectronic module array system as defined in claim 1, wherein at least one of the plurality of optoelectronic modules is a removable SFP or a XFP transceiver module and includes a single or a double fiber connector.

29. (New) An optoelectronic module array system as defined in claim 10, wherein at least one of the plurality of transceiver modules is a removable SFP or a XFP transceiver module and includes a single or a double fiber connector.

30. (New) An optoelectronic module array system as defined in claim 4, wherein each optoelectronic module includes an outer housing that is received within a respective one of the cages when the optoelectronic modules are removably received within a respective one of the cages.

31. (New) An optoelectronic module array system as defined in claim 1, wherein each optoelectronic module includes an outer housing.

32. (New) An optoelectronic module array system as defined in claim 1, wherein the plurality of daughter cards are each operably connected perpendicularly to the host board, the plurality of daughter cards being positioned parallel to one another; and

wherein the plurality of optoelectronic modules are each removably connected to the respective one of the daughter cards such that a surface defining the width of each optoelectronic module is positioned parallel to a surface of the respective daughter card, the daughter card surface being perpendicular with respect to the host board.

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33. (New) An optical device as defined in claim 10, wherein each transceiver module includes an outer housing.

34. (New) An optical device as defined in claim 10, wherein the plurality of daughter cards are each operably connected perpendicularly to the host board, the plurality of daughter cards being positioned parallel to one another; and

the plurality of transceiver modules connected to a respective one of the daughter cards such that each transceiver module is oriented in an edge-on orientation with respect to the host board.

35. (New) An optical transceiver module array system as defined in claim 16, wherein the plurality of daughter cards are each perpendicularly connected to the host board, the plurality of daughter cards being positioned parallel to one another; and

wherein the plurality of transceiver modules are each received by a respective one of the cages, wherein the cages and daughter cards are positioned such that spacing between each transceiver module is minimized.

36. (New) An optical transceiver module array system as defined in claim 20, wherein the plurality of daughter cards are each perpendicularly connected to the host board, the plurality of daughter cards being positioned parallel to one another; and

wherein the cages and daughter cards are positioned such that spacing between each transceiver module is minimized, and wherein each transceiver module includes two

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optical ports that are oriented with respect to the host board such that an imaginary line that passes through a central portion of both optical ports intersects the host board at substantially a right angle.

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37. (New) An apparatus comprising:
a host board;
a plurality of daughter cards connected to the host board;
a plurality of cages, each cage connected to a respective one of the daughter cards,
each cage being configured to receive a removable optoelectronic module.

38. (New) An apparatus as defined in claim 37, each cage including a hole for receiving a lock pin that engages the hole defined in the respective cage to secure the respective removable optoelectronic module within the respective cage.

39. (New) An apparatus as defined in claim 37, further comprising:
a plurality of connector receptacles, each connector receptacle being located to electrically couple the host board to a receptacle on a respective optoelectronic module when the respective optoelectronic module is received in the respective cage.